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EXAMINER

GE, YUZHEN

ART UNIT	PAPER NUMBER
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2624

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/12/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.		Applicant(s)	
	10/652,349		CHRISTIE, GREG	
	Examiner		Art Unit	
	Yuzhen Ge		2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-67 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22, 24-28, 30-67 is/are rejected.
- 7) ☒ Claim(s) 23, 29 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 101

Claim 1-15 and 34-48 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility states in page 53 that "A claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory." However, Claims 1-15 and 34-48 do not recite explicitly "a computer-readable medium encoded with a computer program". The recitation of "an article comprising computer memory encoded with a program" may include other nonstatutory subject matters.

Currently in TC 2600, it is required explicitly to include "computer-readable medium", "encoded" (or "storing", "embodied with a", "encoded with a", "having a stored", "having an encoded"), and "computer program" in the claim language to make a medium claim explicitly a statutory subject matter.

Claim Rejections - 35 USC § 102

1. Claims 1-4, 16-17, 22, and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Kuwata et al (US Patent 6,151,410).

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Regarding claim 1, Kuwata et al teach a machine readable medium containing executable computer program instructions which when executed by a data processing system cause said system to perform a method to transform an electronic image (col. 2, lines 38-55), the method comprising:

determining one or more averages of a color channel for the image by excluding one or more first pixels of the image, each of the one or more first pixels being one of: a) substantially white, and b) substantially black (Figs. 17-19, col. 25, lines 48-64, Fig. 5, col. 26, lines 30-67, col. 27, lines 21-46, col. 30, lines 45-65, col. 32, lines 1-41, a median is an average and the median for each of the channels are determined), ; and

scaling color signals of the color channel for second pixels of the image according to the one or more averages, each of the second pixels being not one of: a) substantially white, and b) substantially black (col. 31, lines 1-25, col. 32, lines 1-41, the color signals are scaled based on the medians, col. 36, lines 10-55).

Regarding claim 2, Kuwata et al teach a medium as in claim 1, wherein the one or more averages are determined by further excluding one or more pixels of the image each of which has at least one color component that is one of: a maximum allowable value and a minimum allowable value (Figs. 17-19, col. 25, lines 48-64, Fig. 5, col. 26, lines 30-67, col. 27, lines 21-46, col. 30, lines 45-65).

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Regarding claim 3, Kuwata et al teach a medium as in claim 1, wherein the color channel is one of: a) red; b) green; and c) blue (Figs. 17-19, col. 25, lines 48-64, Fig. 5, col. 26, lines 30-67, col. 27, lines 21-46, col. 30, lines 45-65, col. 32, lines 1-41).

Regarding claim 4, Kuwata et al teach a medium as in claim 1, wherein the one or more averages comprise at least two of:

- a) an average for a center portion of the image (Figs. 16-18, the natural picture corresponds to the center of the image, each color components have at least one average, col. 28, lines 55-67, col. 30, lines 16-45);

- b) an average for a surrounding portion of the image; and

- c) an average for the image (col. 28, lines 55-67, col. 30, lines 16-45, the median is an average for the image).

Claims 16-17 are the corresponding method claims of claims 1 and 2. Claim 22 is the corresponding system claims of claim 1. Claim 28 is the corresponding image capturing device claims of claim 1. Kuwata et al teach a method, a system, and an image capturing system (title, Figs. 5, 6 and 12, Figs. 1 and 2, col. 16, lines 40-50). Thus Kuwata et al teach claims 16-17, 22, and 28 as evidently explained in the above-cited passages.

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Claim Rejections - 35 USC § 103

2. Claims 1-4, 6-22, 24-28, 30-37, and 39-67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moore et al (US Patent 5,294,989) in view of Zaklika et al (US Patent 7,057,768 B2).

Regarding claim 1, Moore et al teach a method comprising:

determining one or more averages of a color channel for the image by excluding one or more first pixels of the image, (col. 8, lines 53-64, col. 9, lines 47-56, average of each color channel is found for each pixel); and

scaling color signals of the color channel for second pixels of the image according to the one or more averages, (col. 10, lines 26-30, col. 10, lines 55-60, col. 10, lines 10-18, col. 20, lines 3-16, col. 22, lines 20-36).

However they do not explicitly teach that the first pixels are one of a) substantially white, and b) substantially black and the second pixels are not one of a) substantially white, and b) substantially black. In the same field of endeavor, Zaklika et al teach to clip pixels that are one of a) substantially white, and b) substantially black and correcting the non-clipped pixels (col. 4, lines 51-60, col. 5, lines 1-54, col. 9, lines 1-24, col. 9, lines 26-51). It is desirable to have a color correction algorithm that is less susceptible to noise and defective pixels in digital camera and improve color balance performance under different illumination and capturing conditions (col. 1, lines 23-26, col. 1, lines 62-67, col. 2, lines 24-29, col. 2, lines 55-62, col. 3, lines 34-41, col. 3, lines 45-54 of Zaklika et al). It is also desirable to exclude the influence of black or white frames for color correction. Therefore it would have been obvious to one of ordinary skill in the

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art, at the time of invention, to use the method of Zaklika et al to exclude pixels that are one of a) substantially white, and b) substantially black and only correct those that are not excluded.

Moore et al also do not explicitly teach a machine readable medium containing executable computer program instructions which when executed by a data processing system cause said system to perform a method to transform an electronic image. Zaklika et al teach a computer assisted image method (col. 1, lines 6-10) and inherently a computer readable medium. It is desirable to make a processing method portable from a computer to another computer. It would have been obvious to one of ordinary skill in the art, at the time of the invention, to store the processing steps of the method taught by Moore et al and Zaklika et al in a computer readable medium, because the combination makes the processing method portable and therefore increase its application.

Regarding claim 2, Moore et al and Zaklika et al teach a medium as in claim 1. Zaklika et al further teach wherein the one or more averages are determined by further excluding one or more pixels of the image each of which has at least one color component that is one of: a maximum allowable value and a minimum allowable value (Fig. 1, col. 4, lines 38-60; col. 5, lines 1-46, col. 6, lines 1-55, col. 9, lines 1-24).

Regarding claim 3, Moore et al and Zaklika et al teach a medium as in claim 1. Moore et al further teach wherein the color channel is one of: a) red; b) green; and c) blue (col. 8, lines 53-60, col. 10, lines 1-9).

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Regarding claim 4, Moore et al and Zaklika et al teach a medium as in claim 1, wherein the one or more averages comprise at least two of:

a) an average for a center portion of the image (col. 8, lines 53-63, the average for center pixel is found);

b) an average for a surrounding portion of the image (col. 8, lines 53-63, the average for pixel surrounding the center pixel is found); and c) an average for the image.

Regarding claim 6, Moore et al and Zaklika et al teach a medium as in claim 4. Moore et al further teach wherein each of the color signals is scaled by the one or more averages to generate respectively one or more signals that are weighted according to a distance to a selected point in the image (col. 8, lines 53-63).

Regarding claims 7 and 8, Moore et al and Zaklika et al teach a medium as in claim 1. Zaklika et al further teach scaling the luminance and thus each of the color signals with respect to a signal of the color channel of a selected color and the selected color is gray (col. 10, lines 50-58).

Regarding claim 9, Moore et al and Zaklika et al teach a medium as in claim 1. Moore et al further teach wherein each of the color signals is scaled further according to a distance to a selected point in the image (col. 8, lines 53-63, Fig. 4).

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Regarding claim 10, Moore et al and Zaklika et al teach a medium as in claim 1. Zaklika et al further teach wherein the method further comprises: adjusting luminance levels of the second pixels back to levels before the color signals of the color channel are scaled (col. 10, lines 40-60). It is desirable to restore the appearance of the original scene illuminant (col. 10, lines 21-35 of Zaklika et al). Therefore it would have been obvious to one of ordinary skill in the art, at the time of invention, to adjusting luminance levels of the second pixels back to levels before the color signals of the color channel are scaled so that the original scene illuminant is shown.

Regarding claim 11, Moore et al and Zaklika et al teach a medium as in claim 1, wherein the method further comprises: adjusting luminance levels of the second pixels to stretch a range of luminance levels of the second pixels to a predetermined range (col. 3, lines 12-16, col. 5, lines 1-47, col. 6, line 20-col. 7, line 13, predetermined is in the sense that it is determined before the correction step, col. 9, lines 3-24).

Regarding claim 12, Moore et al and Zaklika et al teach a medium as in claim 11. Zaklika et al further teach wherein the predetermined range is a maximum allowable range (col. 3, lines 12-40, col. 5, lines 1-47, col. 6, line 20-col. 7, line 13, col. 9, lines 3-24)

Regarding claim 13, Moore et al and Zaklika et al teach a medium as in claim 12. Zaklika et al further teach wherein the range of luminance levels of the second pixels is linearly stretched (col. 3, lines 12-40, col. 5, lines 1-47, col. 6, line 20-col. 7, line 13).

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Regarding claim 14, Moore et al and Zaklika et al teach a medium as in claim 11. Zaklika et al further teach wherein the luminance levels of the second pixels are determined with equal weights for all color channels which consist red, green and blue channels (col. 10, lines 50-59).

Regarding claim 15, Moore et al and Zaklika et al teach a medium as in claim 11. Moore et al further teach wherein the method further comprises: decreasing luminance levels for third pixels in a boundary region of the image according to distances of the third pixels to a selected point in the image (col. 8, lines 53-63, the red intensity of another node that is further away from the node of interest is lowered and thus the luminance is lowered, col. 10, lines 19-30).

Claims 16-21 are the corresponding method claims of claims 1, 2, 7, 9, 10 and 11. Moore et al teach a method (col. 5, lines 49-65). Thus Moore et al and Zaklika et al teach claims 16-21 as evidently explained in the above-cited passages.

Claims 22, 24-27 are the corresponding system claims of claims 1, 7-8, 9, 10, and 11. Moore et al teach a system (col. 6, lines 17-51). Thus Moore et al and Zaklika et al teach claims 22 and 24-27 as evidently explained in the above-cited passages.

Claims 28 and 30-33 are the corresponding image capturing device claims of claims 1, 7, 9, 10, and 11, 14. Moore et al teach an image capturing system (Fig. 5, col. 6, lines 17-51, col. 10, lines 1-18). Thus Moore et al and Zaklika et al teach claims 28 and 30-33 as evidently explained in the above-cited passages.

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Claims 34, 36-37 and 39-48 are the corresponding broader version of claims 1, 3-4 and 6-15.

Moore et al and Zaklika et al teach claims 1, 3-4 and 6-15. Thus Moore et al and Zaklika et al teach claims 34, 36-37 and 39-48 as evidently explained in the above-cited passages.

Regarding claim 35, Moore et al and Zaklika et al teach a medium as in claim 34. Moore et al further teach wherein the image comprises a frame of a video stream in a video conference; and, said scaling is performed in real time for the video conference (col. 2, lines 51-55, col. 5, lines 18-39, col. 9, lines 26-31, col. 9, lines 59-64, col. 10, lines 19-23, the system in Fig. 5 or the video imaging system taught by Moore et al can be used for video conferencing).

Claims 49-54 are the corresponding method claims of claims 34, 35, 40, 42, 43, and 44. Moore et al teach a method (col. 5, lines 49-65). Thus Moore et al and Zaklika et al teach claims 49-54 as evidently explained in the above-cited passages.

Claims 55-60 are the corresponding system claims of claims 34, 35, 40, 42, 43, and 44, 48.

Moore et al teach a system (col. 6, lines 17-51). Thus Moore et al and Zaklika et al teach claims 55-60 as evidently explained in the above-cited passages.

Claims 61-67 are the corresponding image capturing device claims of claims 34, 35, 40, 42, 43, 44 and 48. Moore et al teach an image capturing system (Fig. 5, col. 6, lines 17-51, col. 10, lines

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1-18). Thus Moore et al and Zaklika et al teach claims 61-67 as evidently explained in the above-cited passages.

Allowable Subject Matter

3. Claims 5 and 38 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 101, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. Claims 23 and 29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art fails to teach the listed claims each of which specifically comprises the following listed feature(s) in combination with other limitations in the respective claims.

--wherein each of the color signals is scaled with respect to a signal of a selected color in the color channel by a factor which is a function of: the one or more averages and a distance to a selected point in the image.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yuzhen Ge whose telephone number is 571-272 7636. The examiner can normally be reached on 7:30am-4:00pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on 571-272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Yuzhen Ge
Examiner
Art Unit 2624

WENPENG CHEN
PRIMARY EXAMINER


1/22/07